

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
10 March 2005 (10.03.2005)

PCT

(10) International Publication Number
WO 2005/021800 A2

- (51) International Patent Classification⁷: **C12Q 1/68**
- (21) International Application Number:
PCT/US2004/026857
- (22) International Filing Date: 17 August 2004 (17.08.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/497,222 22 August 2003 (22.08.2003) US
60/543,784 11 February 2004 (11.02.2004) US
- (71) Applicant (for all designated States except US): **SIMA THERAPEUTICS, INC.** [US/US]; 2950 Wilderness Place, Boulder, CO 80301 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **RADKA, Susan** [US/US]; 7933 Orion Way, Arvada, CO 80007 (US). **ZINNEN, Shawn** [US/US]; 2378 Birch Street, Denver, CO 80207 (US). **JADHAV, Vasant** [IN/US]; 1951 Grandview Avenue, Aptment #A4-B, Boulder, CO 80302 (US). **MCSWIGGEN, James** [US/US]; 4866 Franklin Drive, Boulder, CO 80301 (US). **VAISH, Narendra, K.** [IN/US]; 1313 Williams Street, #503, Denver, CO 80218 (US).
- (74) Agent: **GREENFIELD, Michael, S.**; McDonnell Boehnen Hulbert & Berghoff LLP, 300 South Wacker Drive, Suite 3100, Chicago, IL 60606 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:**
— without international search report and to be republished upon receipt of that report
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: DETECTION AND QUANTITATION OF NUCLEIC ACID MOLECULES IN BIOLOGICAL SAMPLES

(57) Abstract: The present invention concerns processes for the detection and quantitation of nucleic acid molecules, polynucleotides, and/or oligonucleotides in a sample using hybridization-detection assays, antibody-mediated recognition assays, nucleic acid sensor molecules, chromatographic assays, and/or electrophoresis assays. The present invention specifically concerns processes for the detection and quantitation of double stranded nucleic acid molecules, polynucleotides, and/or oligonucleotides in a sample using hybridization-detection assays. The nucleic acid molecules, polynucleotides, and/or oligonucleotides can include molecules that mediate RNA interference, such as short interfering nucleic acid (siNA), short interfering RNA (siRNA), double-stranded RNA (dsRNA), micro-RNA (miRNA), and short hairpin RNA (shRNA) molecules. The nucleic acid molecules, polynucleotides, and/or oligonucleotides can include nucleic acid aptamers, enzymatic nucleic acid molecules, decoys, antisense, 2',5'-oligoadenylate molecules, triplex forming oligonucleotides or any other nucleic acid molecule of interest. The present invention also concerns kits that allow for the detection and quantitation of nucleic acid molecules, polynucleotides, and/or oligonucleotides in a sample.